

Lick Creek TMDL

Russell County

Public Meeting

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VA DEQ

Regulations



Impairment

Lick Creek Not Supporting

1. Aquatic Life Use

General Standard (Benthic) (1998)

2. Recreation Use

Bacteria--Total Fecal Coliform,

2 violations in 7 samples (2006)

Bacteria--E. Coli.

5 violations in 9 samples (2006)

Terms

- **Impairment**
- **Water Quality Standard**
 - Designated use
 - Criterion
 - Narrative (words)
 - Numeric (number)
- **Total Maximum Daily Load**





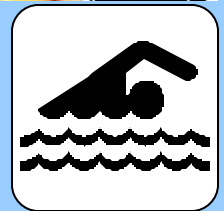
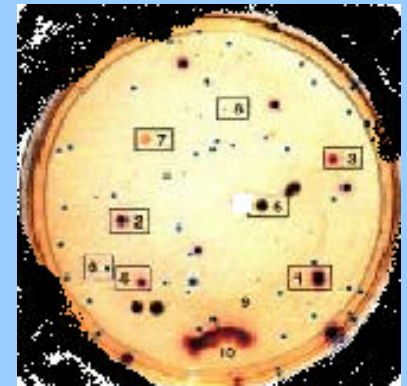
use



criterion

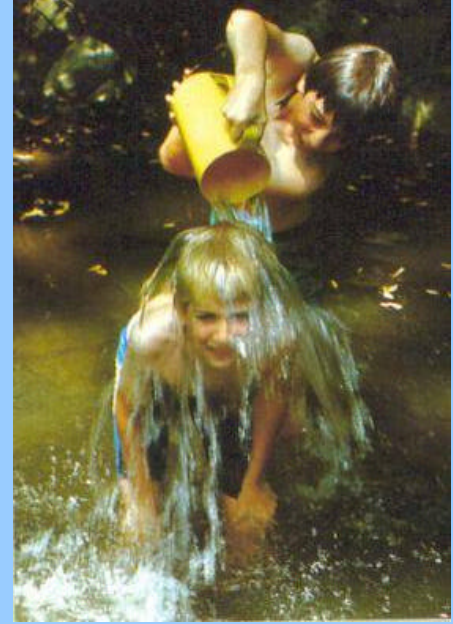
Water Quality Standards

- To protect designated uses
 - **Recreational use** is measured by the number of colony forming units of bacteria in the water
 - **Aquatic life use** is measured by the numbers and varieties of aquatic organisms that live in our streams



Designated Uses

Recreation (swimming and boating)



Aquatic Life

balanced, indigenous including game fish



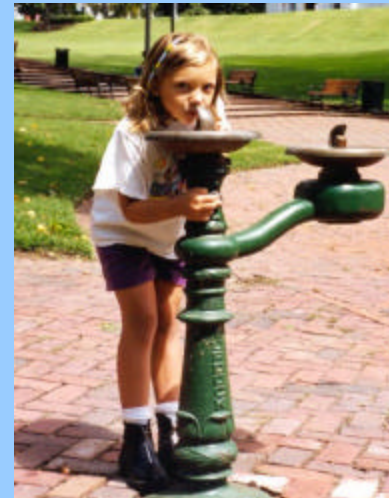
Trout Waters

Wildlife

Edible natural resources

Fish

Shellfish (on the coast)

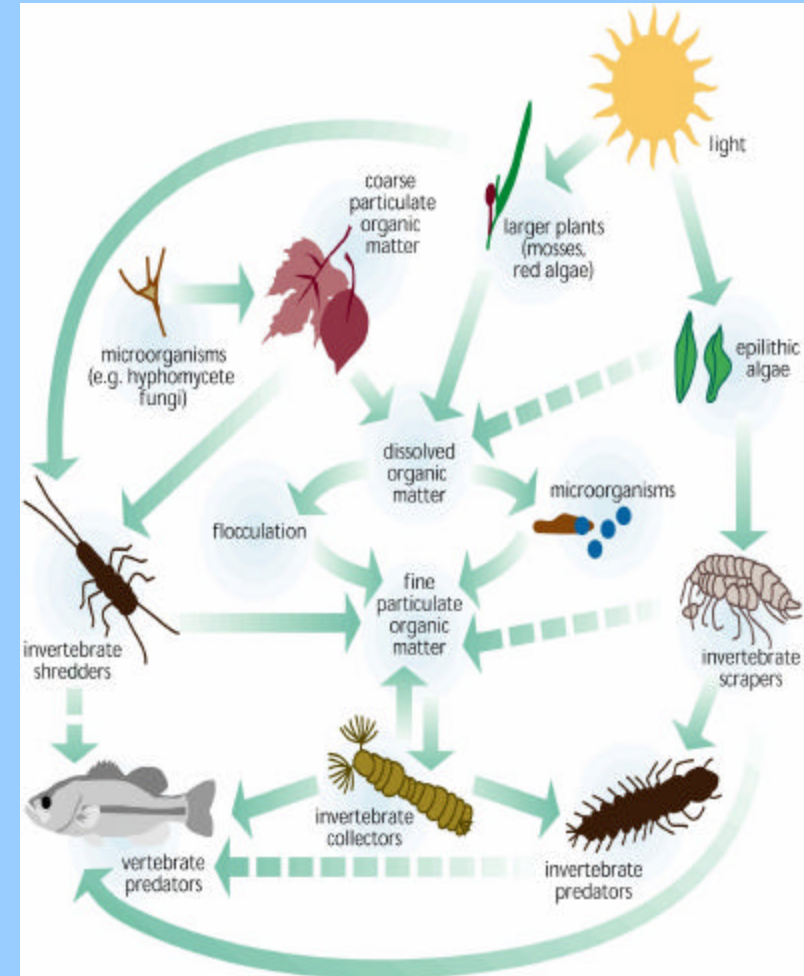


Public Water Supply

Aquatic Life Use

Good indicators of Water Quality

- High diversity
- Respond to environmental conditions predictably and quickly
- Wide spread distributions and relatively easy to identify



Applicable Water Quality Standards

- **Designated Use** (9 VAC 25-260-10): *"All state waters ... are designated for the following uses: ...the propagation and growth of a balanced, indigenous population of aquatic life...which might reasonably be expected to inhabit them;..."*
- **General Standard** (9 VAC 25-260-20): *"All state waters shall be free from substances...which are harmful to human, animal, plant, or aquatic life."*
- **Bacteria Standard** (9 VAC 25-260-170): *"A. In surface waters...the following criteria shall apply to protect primary contact recreational uses:..1. Fecal coliform ..."*
- Effective January 2003

Recreation Use

1. Fecal coliform not to exceed

- a geometric mean of 200/100 ml over two + samples a month nor
- 400/100 ml for more than 10% of the total samples over a month exceed.

2. *E. coli* and enterococci shall not exceed (per 100 ml) :

	<u>Geometric Mean</u>	<u>Single Sample Maximum</u>
Freshwater		
<i>E.coli</i>	126	235
Saltwater and Transition Zone		
enterococci	35	104



EPA Recommends *E. coli* and/or *Enterococci* over Fecal Coliform since there are better indicators of human health risk from recreation use such as primary contact (swimming)

What is a TMDL or Total Maximum Daily Load?

- Amount of a pollutant that a waterbody can receive and still meet water quality standards
- It is pollutant specific
 - Aquatic Life Stressors
 - Bacteria
- It is a process to restore impaired waters
- A special study that:
 - Identifies all significant pollution sources,
 - Calculates amount of pollution from each source, and
 - Calculates pollution reductions, by source, needed to attain water quality standards.

Total Maximum Daily Loads

- Mandated by Law -

- **Federal 1972 Clean Water Act requires**
 - Water Quality Monitoring
 - Periodic Assessment and Impaired Waters Listing
 - Develop TMDLs for Impaired Waters
- **Virginia's Water Quality Monitoring Information and Restoration Act (WQMIRA) of 1997 requires**
 - TMDLs for Impaired Waters
 - An Implementation Plan
- **EPA 1999 Consent Degree requires TMDL Reports for all 1998 listed streams by 2010**

Summary

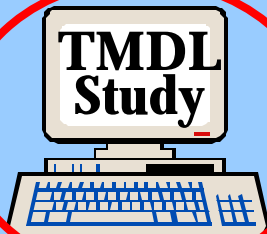
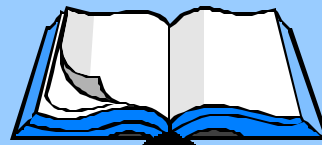
- TMDL -

- Amount of a pollutant that a waterbody can receive and meet water quality standards
- Pollutant specific (bacteria, PCB, etc.)
- Restore impaired waters
- A special study that:
 - Identifies significant pollution sources,
 - Calculates amount of pollution from each source, and
 - Calculates pollution reductions, by source, needed to attain water quality standards.

What Next?

We Are Here

Implementation Plan



- Identifies permit controls, best management practices, or remediation options needed to make necessary pollutant reductions

Implementation

T_{total}
 M_{maximum}
 D_{aily}
 L_{oad}

Polluted

- Calculates amounts from each source
- Tracks pollutants in the system
- Sets maximum pollutant load
- Estimates necessary pollutant reductions

Clean

Water quality standards met

The Process

Water quality standards not met



Information

- **TMDL**
 - **Virginia**
 - **DEQ homepage** - <http://www.deq.virginia.gov/tmdl>
 - **Federal**
 - **EPA homepage** - <http://www.epa.gov/owow/tmdl/>



Thank You !

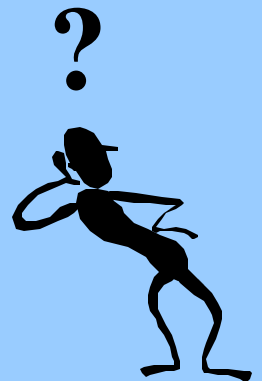
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# Extra Slides



## Lick Creek Watershed

